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ORIGINAL

Early-Onset vs. Late-Onset Mild Cognitive Impairment: A qualitative comparison

Deterioro Cognitivo Leve de Inicio Temprano vs. Inicio Tardío: Una comparación cualitativa

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ABSTRACT

Introduction: traditionally, research on mild cognitive impairment has concentrated on individuals over 65 due to its higher prevalence in this age group. However, evidence indicates that it can also affect younger adults.
Objective: to perform a qualitative comparison of the clinical, psychopathological, and neuropsychological features of a sample of patients with this diagnosis.
Method: a retrospective study was conducted using 717 medical records from a Health Service Provider Institution. Two groups were established: 1) Early-onset, comprising clinical records of patients aged 18 to 64; and 2) Late-onset, comprising clinical records of patients aged 65 to 95.
Results: the most prevalent subtype in both groups was the amnesic multiple domains. Anhedonia was the most frequent symptom in both groups, followed by irritability, low frustration tolerance, anxiety, and sleep disturbances. Results from the two neuropsychological assessments revealed moderate impairments in memory, language, attention and executive functions in both groups.
Conclusions: the term 'cognitive impairment' has historically been associated with a 'degenerative' connotation, initially linked to Alzheimer's disease. Yet, early cases of cognitive impairment reveal that other medical conditions can also be associated with mild neuropsychological disturbances leading to cognitive decline, without necessarily progressing to dementia.

Keywords: Neuropsychology; Neuropsychiatry; Psychopathology; Cognition; Amnesia.

RESUMEN

Introducción: tradicionalmente, la investigación sobre el deterioro cognitivo leve se ha centrado en individuos mayores de 65 años debido a su mayor prevalencia en este grupo de edad. Sin embargo, la evidencia indica que también puede afectar a adultos más jóvenes.
Objetivo: realizar una comparación cualitativa de las características clínicas, psicopatológicas y neuropsicológicas de una muestra de pacientes con este diagnóstico.
Método: se realizó un estudio retrospectivo utilizando 717 historias clínicas de una Institución Prestadora de Servicios de Salud. Se establecieron dos grupos: 1) Aparición-temprana, formado por historias clínicas de pacientes de 18 a 64 años; y 2) Aparición-tardía, formado por historias clínicas de pacientes de 65 a 95 años.
Resultados: el subtipo más prevalente en ambos grupos fue el amnésico de dominios múltiples. La anhedonia fue el síntoma más frecuente en ambos grupos, seguido de la irritabilidad, la baja tolerancia a la frustración, la ansiedad y los trastornos del sueño. Los resultados de las dos evaluaciones neuropsicológicas revelaron

alteraciones moderadas en la memoria, el lenguaje, la atención y las funciones ejecutivas en ambos grupos. **Conclusiones**: el término "deterioro cognitivo" se ha asociado históricamente a una connotación "degenerativa", vinculada inicialmente a la enfermedad de Alzheimer. Sin embargo, los primeros casos de deterioro cognitivo revelan que otra afección es médicas también pueden asociarse a alteraciones neuropsicológicas leves que conducen a un deterioro cognitivo, sin progresar necesariamente hacia la demencia.

Palabras clave: Deterioro Cognitivo Leve; Trastornos Neurocognitivos; Lesión Cerebral; Amnesia.

INTRODUCTION

In recent years, the fields of neurology, neuropsychology, and neuropsychiatry have intensified efforts to advance the understanding of the onset and progression of dementias, as well as to differentiate them from other cognitive impairments, whether associated with or independent of normal aging. Early identification of signs and symptoms is a critical strategy for achieving more accurate early diagnoses, which can inform more effective medical and psychological interventions. However, cognitive changes are not exclusively linked to normal aging and may manifest in individuals younger than 65. Mild cognitive impairment (MCI) is a neurocognitive condition characterized by a decline in cognitive functions that does not interfere with daily life activities but poses a risk for progression to dementia.[1]

Traditionally, research on MCI has concentrated on individuals over 65 due to its higher prevalence in this age group.[2] Additionally, the assumption that MCI often precedes dementia has led to a focus on older populations, who are at greater risk of progressing to that disease. However, evidence indicates that MCI can also affect younger adults. Early-onset MCI (EOMCI) (i.e., occurring in individuals under 65) is a relatively under-researched area. Literature reviews reveal that MCI has been diagnosed in individuals as young as 45.[3] EOMCI is thought to present with greater heterogeneity, more comorbid conditions, and a higher prevalence of psychopathological symptoms.[4]

MCI is generally defined as a decline in one or more cognitive domains that does not significantly interfere with daily life but warrants clinical attention. Initially, research focused primarily on memory decline, under the assumption that it would inevitably progress to Alzheimer's disease.1 However, over time, it became clear that not all cases of MCI evolve into dementia. As research advanced, the preservation of overall cognitive function gained importance, leading to a shift in focus. Consequently, in some classification systems, the emphasis has shifted from the etiology of MCI to the assessment of cognitive decline relative to the individual's age.[5]

Some studies involving Colombian populations have examined early-onset mild cognitive impairment (EOMCI), with participants as young as 50 years old.[6,7] However, the existing literature has predominantly focused on prevalence and associated factors in individuals over 65. To the extent verified through the review of previous studies, there are no published studies that include participants younger than 45 or that compare EOMCI with late-onset MCI (LOMCI). In this study, our aim was to conduct a qualitative description and comparison of clinical, psychopathological, and neuropsychological aspects between these two groups. Although exploratory in nature, this research may offer valuable clinical insights and highlight potential directions for further empirical research.

METHOD

Type of study

A retrospective study was conducted using medical record data to perform a qualitative comparison of the clinical, psychopathological, and neuropsychological characteristics of a considerable sample of patients diagnosed with MCI.

Data Source and sample

Medical records of patients attended at a Health Service Provider Institution (IPS) in Valle del Cauca, Colombia, from February to November 2023 were reviewed. Only medical records of patients with a specific diagnosis of MCI in any of its subtypes were included. A clinical neuropsychologist conducted the diagnoses following a comprehensive clinical evaluation and the use of several neuropsychological tests. The sample consisted of 717 medical records. The age of the patients varied from 18 to 95 years. Two groups were established: 1) EOMCI, comprising clinical records of patients aged 18 to 64; and 2) LOMCI, comprising clinical records of patients aged 65 to 95. Table 1 provides additional information.

Data collection methods and instruments.

Data were manually extracted from the medical records by two reviewers using a standardized form. This form collected information on sociodemographic, clinical, psychopathological, and neuropsychological characteristics, as well as personal history. Sociodemographic information, history, and symptoms were recorded using an ad hoc questionnaire and open-ended questions during the anamnesis. Clinical measures were obtained through self-administered questionnaires with valid and reliable psychometric properties. These included: the Instrumental Activities of Daily Living (IADL) and the Barthel Index (BI) to determine patients' autonomy in daily life; the Blessed Dementia Scale (BDS) to assess cognitive function, particularly in the context of dementia and other cognitive impairments; the Beck Depression Inventory (BDI); the Zung Self-Rating Depression Scale (SDS); and the Yesavage Geriatric Depression Scale (GDS) to obtain a comprehensive perspective on depression levels. Additionally, the Montreal Cognitive Assessment (MoCA) was administered as a screening tool to assess overall cognitive functioning.

Regarding neuropsychological functioning measures, the Neuropsi neuropsychological assessment battery was used. It primarily evaluates functions such as attention, memory, and executive functions. This battery was specifically developed for Spanish-speaking populations and includes normative data for Colombia. Additionally, the Addenbrooke's Cognitive Examination (ACE-III) was used, which is a neuropsychological test that assesses attention, memory, language, executive function, and orientation, and is useful for detecting cognitive impairment and diagnosing disorders such as dementia.

Statistical techniques and procedures

Data collected from medical records were systematized and analyzed using descriptive statistics (frequencies and percentages) with SPSS v. 28 software.

Ethical parameters

All primary data from medical records were collected in adherence to the guidelines set forth by the IPS Ethics Committee. Secondary data used for this study were recorded ensuring confidentiality.

RESULTS

Table 1 outlines the sociodemographic characteristics and subtypes of MCI for each group. In the EOMCI group, the highest percentage of patients were within the age range of 40 to 59 years. This group also included a notable proportion of young adults, aged 18 to 39 years. In contrast, the LOMCI group was predominantly composed of patients aged 70 to 79 years. In both groups, there was a higher proportion of women compared to men. The percentage of women was notably higher in the LOMCI group compared to the EOMCI group, and the gender disparity was also more pronounced in the LOMCI group.

Table 1. Sociodemographic Characteristics and DCL subtypes

	Early-Onset (*n* = 303) *f* (%)	Late-Onset (*n* = 414) *f* (%)
Age range		
18 to 24	19 (6,3)	0 (0,0)
25 to 39	58 (19,1)	0 (0,0)
40 to 59	161 (53,1)	0 (0,0)
60 to 64	65 (21,5)	0 (0,0)
64 to 69	0 (0,0)	74 (17,9)
70 to 79	0 (0,0)	220 (53,1)
80 to 89	0 (0,0)	112 (27,1)
90 to 95	0 (0,0)	8 (1,9)
Sex		
Female	171 (56,4)	259 (62,5)
Male	132 (43,6)	155 (37,5)
Marital Status		
Married	88 (29,0)	167 (40,3)
Single	124 (40,9)	65 (15,7)
Widowed	23 (7,4)	138 (33,3)
Common-law Partner	56 (18,5)	36 (8,7)
Divorced	11 (3,6)	6 (1,4)
Education Level		
High School Graduate	122 (40,2)	76 (18,3)

Primary School	33 (10,9)	137 (33,1)
Technical	58 (19,1)	37 (8,9)
Incomplete High School	38 (12,5)	55 (13,2)
Incomplete Primary School	18 (5,9)	54 (13,0)
University	28 (9,29	37 (8,9)
Postgraduate	3 (1,0)	5 (1,2)
Illiterate	3 (1,0)	13 (3,1)
Occupation		
Retired	3 (0,1)	256 (61,8)
Employed	99 (32,7)	88 (21,2)
Houseworker	185 (61,0)	0 (0,0)
Unemployed	2 (0,6)	70 (16,9)
Student	14 (4,6)	0 (0,0)
Subtypes		
Amnestic single domain	22 (7,3)	89 (21,5)
Amnestic multiple domains	225 (74,3)	277 (67,0)
Nonamnestic single domain	56 (18,4)	46 (11,1)
Nonamnestic multiple domains	0 (0,0)	2 (0,5)

Concerning marital status, both groups had the highest percentage of married individuals, followed by single individuals in the EOMCI group and widowed individuals in the LOMCI group. In terms of educational attainment, the EOMCI group had the highest percentage of patients with completed high school education, while the LOMCI group predominantly had patients with completed primary education. Regarding current occupation, the EOMCI group primarily consisted of homemakers, whereas the LOMCI group was predominantly retired individuals. Lastly, the most frequently observed diagnosis in both groups was amnestic multidomain MCI.

Table 2 summarizes the most significant personal medical and psychological histories of the patients. In the EOMCI group, hypertension was the most prevalent comorbidity. Conversely, in the LOMCI group, neurological disorders (such as cerebrovascular accidents and migraines) were the most common. Neurological disorders ranked as the second most frequent comorbidity in the EOMCI group, while hypertension was the second most prevalent in the LOMCI group. Symptoms of depression or anxiety, whether associated with a specific emotional disorder or not, were also prevalent antecedents in both groups.

Table 2. Medical and psychological history

	Early-Onset (*n* = 303) *f* (%)	**Late-Onset** (*n* = 414) *f* (%)
Hypertension	150 (49,5)	141 (34,1)
Neurological abnormalities	130 (42,9)	161 (38,9)
Symptoms of Depression or Anxiety	59 (19,5)	84 (20,3)
Cognitive impairment	58 (19,1)	106 (25,6)
Medical conditions not related to the nervous system	55 (18,1)	64 (15,4)
Psychological disorders	50 (16,5)	82 (19,8)
Diabetes	52 (17,2)	55 (13,3)
Hypothyroidism	46 (15,2)	71 (17,1)
Medical conditions related to the nervous system	45 (14,9)	75 (18,1)
Epilepsy	35 (11,6)	21 (5,1)
Other	37 (12,2)	130 (31,4)
Sleep disorder	26 (8,6)	34 (8,2)
Mixed Anxiety/Depression Disorder	25 (8,3)	105 (25,4)
Traumatic brain injury	17 (5,6)	24 (5,8)
Bipolar affective disorder	10 (3,3)	20 (4,8)

Table 3 presents the levels of global cognitive functioning, basic and instrumental activities of daily living, cognitive functioning within the context of dementia, and depression. According to MoCA scores, both groups showed the highest frequencies in the cognitive impairment range, with the LOMCI group exhibiting a higher percentage. For activities of daily living, most individuals in both groups performed at a normal level. However, there were significant percentages of individuals exhibiting moderate and intermediate performance in instrumental activities. Regarding cognitive functioning in the context of dementia (BDS), the majority in

both groups were at the normal functioning level. Depression levels, as assessed by all three measures, were generally normal or minimal. Nevertheless, the BDI evaluation identified substantial percentages of moderate depression in both groups.

Table 3. Clinical Features

	Early-Onset (*n* = 303) *f* (%)	**Late-Onset (*n* = 414) *f* (%)**
MoCA		
Mild impairment	14 (4,6)	9 (2,2)
Deterioration	236 (77,9)	343 (82,9)
Normal	48 (15,8)	57 (13,8)
IADL		
Normal	158 (22,1)	195 (27,2)
Mild	98 (13,7)	135 (18,9)
Moderate	41 (5,7)	63 (8,8)
Severe	6 (0,8)	20 (2,8)
BI		
Normal	238 (78,5)	339 (81,9)
Mild	14 (4,6)	28 (6,8)
Moderate	3 (1,0)	8 (1,9)
Severe	0 (0,0)	0 (0,0)
Not Recorded	47 (15,5)	38 (9,2)
BDS		
Normal	225 (74,3)	338 (81,6)
Suspicious	7 (2,3)	28 (6,8)
Not Recorded	71 (23,4)	48 (11,6)
BDI		
Moderate	177 (58,4)	210 (50,7)
Low	95 (31,4)	166 (40,1)
Severe	9 (3,0)	10 (2,4)
Not Recorded	22 (7,3)	28 (6,8)
SDS		
Normal	73 (24,1)	145 (35,0)
Minimal	75 (24,8)	104 (25,1)
Moderate	135 (44,6)	155 (37,4)
Severe	20 (6,6)	10 (2,4)
GDS		
Normal	65 (21,5)	141 (34,1)
Minimal	100 (33,0)	122 (29,5)
Moderate	46 (15,2)	69 (16,7)
Not Recorded	92 (30,4)	82 (19,8)

Abbreviations: MoCa: Montreal Cognitive Assessment. IADL: Instrumental Activities of Daily Living; BI: Barthel Index. BDS: Blessed Dementia Scale; BDI: Beck Depression Inventory. SDS: Self-rating Depression Scale; GDS: Geriatric Depression Scale

Regarding psychopathological symptoms (table 4), the results reveal a greater quantity and diversity in the LOMCI group. However, a symptom-by-symptom comparison showed that the EOMCI group exhibited higher percentages for the five most prevalent symptoms. Anhedonia was the most frequent symptom in both groups, followed by irritability, low frustration tolerance, anxiety, and sleep disturbances. Although less common, the presence of aggression, nervousness, impulsivity, isolation, and, specially, hallucinations are noteworthy.

Table 4. Psychopathological Symptoms

	Early-Onset (*n* = 303) *f* (%)	**Late-Onset (*n* = 414) *f* (%)**
Anhedonia	184 (60,7)	205 (49,5)
Irritability	160 (52,8)	191 (46,1)
Low frustration tolerance	154 (50,8)	187 (45,2)
Distress/Anxiety/Restlessness	153 (50,2)	183 (44,2)

Sleep disturbances	106 (35,0)	109 (26,3)
Aggressiveness/Hostility	37 (12,2)	58 (14,0)
Nervousness/Restlessness/Desperation	16 (5,3)	30 (7,2)
Sadness	5 (1,7)	7 (1,7)
Impulsivity	2 (0,7)	9 (2,2)
Isolation/Withdrawal	4 (1,3)	4 (1,0)
Hallucinations	6 (2,0)	2 (0,5)
Noise intolerance	4 (1,3)	2 (0,5)
Mood swings/Emotional lability	0 (0,0)	4 (1,0)
Difficulty in emotion regulation	0 (0,0)	4 (1,0)
Stress	2 (0,7)	2 (0,5)
Colopathy	1 (0,3)	2 (0,5)
Self-aggression	1 (0,3)	1 (0,2)
Paranoid ideas	0 (0,0)	2 (0,5)
Panic	2 (0,7)	0 (0,0)
Behavioral disinhibition	0 (0,0)	1 (0,2)
Difficulty expressing emotions	0 (0,0)	1 (0,2)
Stereotypies	0 (0,0)	1 (0,2)
Suicidal ideation	0 (0,0)	1 (0,2)
Indifference	0 (0,0)	1 (0,2)
Insecurity	1 (0,3)	0 (0,0)
Emotional lability/Mood changes	0 (0,0)	1 (0,2)
Mutism	0 (0,0)	1 (0,2)
Catastrophic thinking	0 (0,0)	1 (0,2)
Adjustment problems	0 (0,0)	1 (0,2)
Sensation of suffocation	0 (0,0)	1 (0,2)
Delusional symptoms	1 (0,3)	0 (0,0)

Table 5 provides information on neuropsychological performance. In the Neuropsi test, over 70 % of patients in both groups exhibited moderate impairments in the following subtests: phonological verbal fluency, words, spontaneous verbal memory, Rey-Osterrieth memory, semantic verbal fluency, key verbal memory, and Rey-Osterrieth encoding. These subtests assess language, encoding, and memory. Additionally, approximately one in two patients in both groups showed moderate impairments in the following subtests: visual detection, digits, calculation, and 20-3. These subtests evaluate attention and concentration as well as executive functions. In the ACE-III test, over 70 % of patients in both groups experienced severe memory deterioration. Furthermore, 40 % of the EOMCI group and 30 % of the LOCMI group exhibited severe attention deterioration.

Table 5. Neuropsychological Functioning

	Early-Onset (*n* = 303) *f* (%)			**Late-Onset (*n* = 414) *f* (%)**		
Neuropsi	**Moderate**	**Severe**	**Normal**	**Moderate**	**Severe**	**Normal**
Phonological verbal fluency	270 (89,1)	3 (1,0)	29 (9,6)	359 (86,7)	13 (3,1)	42 (10,1)
Words	247 (81,5)	0 (0,0)	55 (17,5)	370 (89,4)	2 (0,5)	42 (10,1)
Spontaneous verbal memory	241 (79,5)	1 (0,3)	60 (19,8)	360 (87,0)	3 (0,7)	51 (13,2)
Rey-Osterrieth memory	252 (83,2)	1 (0,3)	49 (16,1)	266 (64,3)	2 (0,5)	146 (35,2)
Semantic verbal fluency	222 (73,3)	13 (4,3)	67 (22,1)	323 (78,0)	16 (3,9)	75 (18,1)
Key verbal memory	224 (73,9)	0 (0,0)	78 (25,7)	326 (78,7)	3 (0,7)	85 (20,5)
Rey-Osterrieth coding	197 (65,0)	1 (0,3)	104 (34,3)	298 (72,0)	2 (0,5)	114 (27,5)
Verbal recognition memory	209 (69,0)	0 (0,0)	93 (31,7)	254 (61,4)	2 (0,5)	158 (38,2)
Visual detection	151 (49,8)	1 (0,3)	150 (49,5)	245 (59,2)	0 (0,0)	169 (39,9)
Digits	154 (50,8)	0 (0,0)	148 (48,9)	197 (47,6)	1 (0,2)	216 (52,2)
Calculation	164 (54,1)	5 (1,7)	133 (43,9)	170 (41,1)	11 (2,7)	233 (56,3)
20-3	113 (37,3)	1 (0,3)	188 (62,0)	173 (41,8)	0 (0,0)	240 (57,9)
Opposite reactions	101 (33,3)	0 (0,0)	201 (66,3)	143 (34,5)	2 (0,5)	269 (65,0)
Motor functions	95 (31,4)	1 (0,3)	206 (68,0)	140 (33,8)	2 (0,5)	272 (65,7)
Alternating movements	92 (30,4)	0 (0,0)	210 (69,3)	131 (31,6)	3 (0,7)	280 (67,6)
Time	67 (22,1)	1 (0,3)	234 (77,3)	80 (19,3)	1 (0,2)	333 (80,4)
Repetition	37 (12,2)	0 (0,0)	265 (87,5)	80 (19,3)	1 (0,2)	333 (80,4)

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Naming	46 (15,2)	0 (0,0)	256 (84,4)	63 (15,2)	1 (0,2)	350 (84,5)
Comprehension	25 (8,3)	0 (0,0)	277 (91,4)	30 (7,2)	1 (0,2)	382 (92,3)
Similarities	15 (5,0)	0 (0,0)	287 (94,7)	33 (8,0)	0 (0,0)	381 (92,0)
Person	1 (0,3)	0 (0,0)	302 (99,7)	4 (1,0)	0 (0,0)	410 (99,0)
Place	0 (0,0)	0 (0,0)	303 (100,0)	1 (0,2)	1 (0,2)	412 (99,5)
ACE III	**Deterioration**	**Mild impairment**	**Normal**	**Deterioration**	**Mild impairment**	**Normal**
Memory	223 (73,6)	72 (23,8)	4 (1,3)	321 (77,5)	88 (21,3)	4 (1,0)
Attention	128 (42,2)	138 (45,5)	33 (10,9)	127 (30,7)	209 (50,5)	77 (18,6)
Fluency	75 (24,8)	161 (53,1)	63 (20,8)	119 (28,7)	205 (49,5)	89 (21,5)
Language	4 (1,3)	66 (21,8)	229 (75,6)	7 (1,7)	68 (16,4)	338 (81,6)
Visuospatial	9 (3,0)	71 (23,4)	219 (72,3)	13 (3,1)	91 (22,0)	309 (74,6)
Total	167 (55,1)	106 (35,0)	26 (8,6)	247 (59,7)	139 (33,6)	27 (6,5)

Neuropsi: Neuropsychological Assessment Battery; ACE III: Addenbrooke´s Cognitive Examination

DISCUSSION

In this study, we present the results of a qualitative comparison between two groups of patients with MCI: an early-onset group and a late-onset group. A key strength of this study was the inclusion of individuals as young as 18 years old, which enabled us to form a diverse cohort ranging from 18 to 64 years of age. Notably, 72,2 % of patients in the early-onset MCI group were between 25 and 59 years old. The most prevalent subtype in both groups was the amnesic multiple domains. Additionally, we identified qualitative differences in clinical, psychopathological, and neuropsychological features between the two groups. We will now discuss each of the most significant aspects in detail.

Regarding global cognitive functioning assessed via the MoCA, the distribution of participants across the three levels was very similar between the two groups, with differences ranging from 2 to 4 percentage points. In both groups, the largest proportion was classified as having cognitive impairment. Cognitive decline is an expected outcome of aging, whether it is normal or pathological. The MoCA is a highly effective screening tool for detecting age-related declines in cognitive performance.[8] However, cognitive impairment in younger individuals is less common, and studies on cognitive decline in this demographic are relatively scarce.

Using the MoCA to compare cognitive functioning among young adults (ages 18 to 24) with major depressive disorder, bipolar disorder, and a control group, Reyes et al.[9] found evidence of functional impairment but no significant cognitive impairment in those with bipolar disorder. The cognitive performance of the depression group did not differ significantly from that of the control group. Although our EOMCI group included some individuals with personal histories of mood disorders (See Table 2), the proportion was too small to account for the frequently low scores observed on the MoCA.

According to medical history, a high percentage of participants in both groups reported having hypertension. However, in the EOMCI group, the percentage was significantly higher (a difference of 15 percentage points). Hypertension has been associated with MCI regardless of age. It has been reported that the prevalence of MCI is highly significantly associated with the number of risk factors (including diabetes, which was also a frequent antecedent in the EOMCI group). In hypertensive patients, the frequency of MCI is 11,8 % compared to 4,8 % in normotensive patients ($p < 0,001$).[10]

Identifying the causes and factors associated with low MoCA scores in the EOMCI group will undoubtedly be a crucial area of research for neurology and neuropsychology. In this study, we could only compare the cognitive performance of the EOMCI group with that of the LOMCI group and found no significant percentage differences. This is a troubling finding, given that the MoCA is primarily designed to detect age-related cognitive declines, which should not apply to the EOMCI group.

Executing instrumental activities of daily living involves more complex neurocognitive and neuropsychological processes compared to basic activities. These processes are generally more preserved and are less likely to be affected during the early stages of cognitive impairment. However, the presence of deficits in instrumental activities in some cases of MCI suggests a greater degree of neuropsychological involvement and may be indicative of a poorer prognosis.[11,12]

No significant deficits were identified in the ability to perform activities of daily living in either group. However, the percentage of patients with mild and moderate deficits in instrumental activities was higher compared to those with the same levels of deficits in basic activities. Notably, 2,8 % of participants in the LOMCI group reported severe deficiencies in performing instrumental activities, while 0,8 % of patients in the EOMCI group reported severe deficiencies. The differences between the groups are not qualitatively significant.

Psychometric measurement of depression using the BDI and the SDS indicated a high prevalence of moderate depression among patients. Both assessments showed that the EOMCI group exhibited significantly higher percentages of moderate depression, with an eight-percentage point differential compared to the LOMCI group.

Moderate levels of depression do not constitute a psychopathological risk and are unlikely to be the primary contributors to the cognitive deficits observed in the patients. However, certain symptoms of depression warrant special consideration: anhedonia and irritability.

The prevalence of anhedonia was greater in the EOMCI group (60,7 %) compared to the LOMCI group (49,5 %), reflecting an 11-percentage point difference. Anhedonia has been documented in 40 % of patients with MCI, with a higher prevalence in the non-amnesic subtype (44 %).[13] However, this data was reported by a study involving adults with a mean age of 71 years. To our knowledge, there is a lack of information regarding anhedonia in patients under 64 years of age within the context of MCI.

Anhedonia is characterized by the inability to experience pleasure. Patients with this neurobiological condition struggle to derive enjoyment from activities that were previously pleasurable to them. Individuals with anhedonia lose interest in activities that normally provided them with satisfaction. Apathy has been linked to neurocognitive disorders (including MCI), notably frontotemporal dementia (FTD), especially when it manifests in younger individuals.[14,15] When neurocognitive disturbances and psychopathological symptoms present concurrently at early stages, the diagnostic process becomes more challenging. Based on a retrospective study extending over 20 years, Tsoukra et al. concluded that misdiagnosis of neurocognitive disorders in younger patients is not uncommon, especially in cases of the behavioral variant of FTD.[16]

Sleep disturbances were also a frequent symptom in both groups, with the EOMCI group showing a six-percentage point higher prevalence compared to the LOMCI group. This percentage difference does not appear substantial enough to classify sleep disturbances as a unique indicator of the EOMCI group. Once again, research on factors associated with MCI has predominantly involved older adults. In this population, sleep disturbances have been correlated with cognitive decline and neurocognitive disorders. It has been suggested that individuals with MCI who experience sleep disturbances should be monitored more closely to detect the early signs of dementia.[17]

Finally, the neuropsychological findings revealed only a limited number of qualitatively significant differences. Overall, both groups exhibited very similar performances across the tests and most subtests. In the Neuropsi test, the Rey-Osterrieth memory subtest exhibited a difference of approximately 20 percentage points between the two groups at the moderate impairment level, with the LOMCI group showing poorer performance. Regarding the ACE-III assessment, a significant difference in impairment levels was observed exclusively in the attention subtest, with a 15-percentage point disparity between the two groups. The LOMCI group exhibited a lower percentage of patients with attention deficits. Results from the two neuropsychological assessments revealed moderate impairments in memory, language, attention and executive functions in both groups. These findings are consistent with reports of neuropsychological deficits observed in adults with MCI.[18,19] This also explains why the amnestic multidomain was the most frequent subtype of MCI in both groups.

Indeed, the diagnosis and conceptualization of MCI are areas under constant revision and refinement.[20] According to the American Psychiatric Association (APA), cognitive impairment is classified as a neurocognitive disorder. In the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), mild neurocognitive disorders occur in the context of a medical condition and may or may not be accompanied by behavioral disturbances.[21] Most of these medical conditions are neurological conditions: Alzheimer's disease, frontotemporal lobar degeneration, Lewy body disease, vascular disease, traumatic brain injury, substance or medication-induced disorder, HIV infection, prion disease, Parkinson's disease, Huntington's disease.

CONCLUSIONS

Not all these neurological conditions are neurodegenerative in etiology or prognosis. The term 'cognitive impairment' has historically been associated with a 'degenerative' connotation, initially linked to Alzheimer's disease. Yet, early cases of cognitive impairment reveal that other medical conditions can also be associated with mild neuropsychological disturbances leading to cognitive decline, without necessarily progressing to dementia. Additionally, classifying these conditions as neurocognitive disorders accommodates the inclusion of behavioral disturbances. As highlighted, psychopathological symptoms are prevalent. Although our study cannot draw definitive conclusions due to the absence of statistical analysis, we believe it offers a valuable characterization of both groups, with the inclusion of individuals under 64 years of age enhancing the significance of our findings.

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CONFLICT OF INTEREST

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